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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,136	12/11/2003	Yiliang Wu	D/A3401	7393

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EXAMINER

TALBOT, BRIAN K

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

9

Office Action Summary	Application No. 10/733,136	Applicant(s) WU ET AL.	
	Examiner Brian K. Talbot	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/17/06 has been entered.
2. Claims 26-29 have been canceled. Claims 1-25 remain in the application.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant

Art Unit: 1762

art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not enable one skilled in the art to “determine” which stabilizers would produce an insulative vs. a semiconductive coating. Furthermore, in the response filed 1/17/06, Applicant argued that the “size of the molecules” is a determining factor which makes the prior art “insulative” and the instant invention “semiconductive”. The specification fails to disclose this “factor” as well as failing to provide one skilled in the art how to determine the “appropriate” size to provide the desired “conductivity”. No where in the specification is there a guideline for one skilled in the art to make and/or use the invention as claimed.

Claim Rejections - 35 USC § 102

5. Claims 1-7,10-18 and 24-25 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Griffith et al. (6,348,295).

Griffith et al. (6,348,295) teaches method for manufacturing electronic elements by thin-film forming methods. Colloidal suspension of nanoparticles that exhibit electrical characteristics. The nanoparticles are surrounded by an insulative shell that may be removed by therefrom by application of energy including heating while the nanoparticles are fused (abstract). The layer may be a continuous film or a desired pattern. The size of the nanoparticles range from 1 nm - 999 nm and may be conductive or semiconductive (col. 3, lines 10-20). The capping groups include amines, thiols, pyridine, etc. (col. 3, lines 40-60). Griffith et al. (6,348,295) teaches substrates as flexible plastics (col. 1, lines 43-46). Griffith et al.

Art Unit: 1762

(6,348,295) also teaches that the resistivity of the capping group is 10^9 ohms/cm or more (col. 3, lines 25-35).

It is noted that the disclosed resistivity meets the claimed limitation of “semiconductive” as argued in the response filed 1/17/06 (3rd paragraph).

“As discussed in applicants' previously filed Amendment, the recited conductivity range falls within the definition of "Semiconductor" (Hawley's Condensed Chemical Dictionary, page 1033, Eleventh Edition 1987) which recites an illustrative resistivity range of 10^{-2} to 10^9 ohms/cm.”

Claim Rejections - 35 USC § 103

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 8,9 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griffith et al. (6,348,295).

Features described above are incorporated here.

Art Unit: 1762

Griffith et al. (6,348,295) fails to teach nanoparticles being metal composites, heating temperatures of less than 250°C and the conductivity of the layer.

While the Examiner acknowledges this fact, Griffith et al. (6,348,295) does teach heating by lasers to remove the capping layer and fuse the nanoparticles to form a conductive layer. It is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation of achieving similar results regardless of the heating process utilized as long as the capping layer is decomposed and the nanoparticles are fused to form the conductive layer. Also Griffith et al. (6,348,295) teaches "moderate heating" which would be suggestive of the claimed heat temperature (col. 5, line 30-40). Regarding the nanoparticles being metal composites v. metals and the conductivity, it is the Examiner's position that this would be a design choice of one practicing in the art and depends upon the end product desired and therefore is deemed as an obvious modification of the art. Furthermore, one skilled in the art would have had a reasonable expectation of achieving similar results with either nanoparticle or conductivity desired.

Response to Amendment

7. Applicant's arguments with respect to claims 1-25 have been considered but are not found persuasive.

Applicant argued that Griffith et al. teaches applying an insulative composition and not a semiconductive layer.

Art Unit: 1762

The Examiner disagrees. While the Examiner acknowledges the fact that Griffith et al. (6,348,295) states an “insulative capping layer”, as noted above the resistivity of the capping layer falls within the range of “semiconductive” as defined by (Hawley's Condensed Chemical Dictionary, page 1033, Eleventh Edition 1987).

In addition, in the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990)

Applicant argued that the “size of the molecules” of the capping layer are critical to “conductivity” of the capping layer.

See 35 USC 112 first paragraph rejection above. The specification only provides support for the stabilizers described in Examples 1-5. Applicant argues that the claimed stabilizer of the prior art is not semiconductive, however, the resistivity rebuts this arguments as it falls within the definition of “semiconductive” as supplied by Applicant. The Examiner questions how on one hand a stabilizer within the “semiconductive” range wouldn't work while another one would? If Applicant were to limit the claims to the disclosed stabilizers, the 35 USC 112 first paragraph rejection would be withdrawn.

In addition, the arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) (“An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut


Art Unit: 1762

a prima facie case of obviousness.”). See MPEP § 716.01(c) for examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 3/21/06
Brian K Talbot
Primary Examiner
Art Unit 1762

BKT